ISSN(Online): 2320-9801
ISSN (Print): 2320-9798

International Journal of Innovative Research in Computer and Communication Engineering

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Website: www.ijircce.com

Vol. 8, Issue 3, March 2020

Smart Waste Monitoring and Alert System Using IoT

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ABSTRACT: In this project the design and development of smart waste management and alert system using arduino is implemented. The entire system is controlled by the ARM. Here first when the waste in the dustbin reaches to 75% then I.R sensor-1 will detect and sends an SMS to the corresponding officer. Next when the waste in dustbin reaches to 90% then I.R sensor-2 will detect and sends an SMS to the officer and in the same way buzzer will gives indication. Hence this project gives effective result

KEYWORDS: ARM, SMS.

I. INTRODUCTION

The dustbins are small plastic containers that are used to store trash on a temporary based .They are often used in homes ,offices ,streets ,parks, etc to collect the waste. In some places ,littering is a serious offence and hence public waste containers are the only way to dispose small waste. Currently, over 23,000 tonnes of waste is produced eachday in Malaysia. However, this amount is expected to rise to30,000 tonnes by the year 2020. The amount of waste generated continues to increase due to the increasing population and development, and only less than 5% of the waste is being recycled

II. LITERATURE SURVEY

In literature reviev, only message will be send,that is the waste will be collected .The new features are added to the proposed system.the miain drawbacks of this excited project is no proper indication ,bad smell etc.

IOT

Internet of Things (IoT) is another correspondence point of view anticipated as a general course of action of physical articles and contraptions being able to talk with one another. It incorporate a course of action of physical articles, gadgets, machines, homes, etc, furnished with hardware, sensors, programming and structure openness with fitting custom stacks that makes them arranged to amass and exchange information with each other

III. PROPOSED METHODOLOGY AND DISCUSSION

Message to regordng To overcome the drawbacks in the existing system,IR SENSORS are attached to the dustbin to send the officer .The display ,crystal oscillator, and finally buzzer will be detect .

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III A. ***Block Diagram***

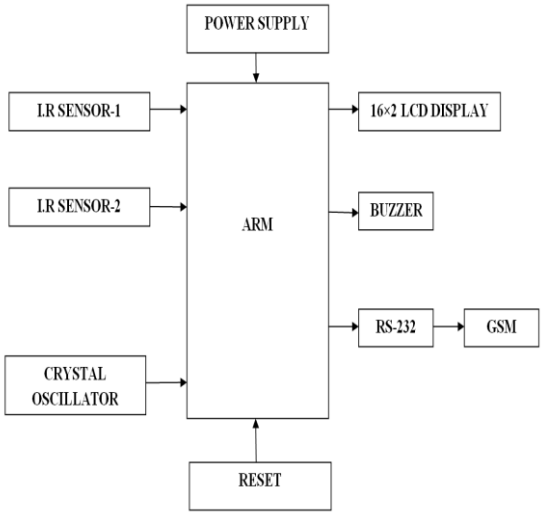

Fig. 1: Block Diagram of the Project

III B.***Flowchart of the System***

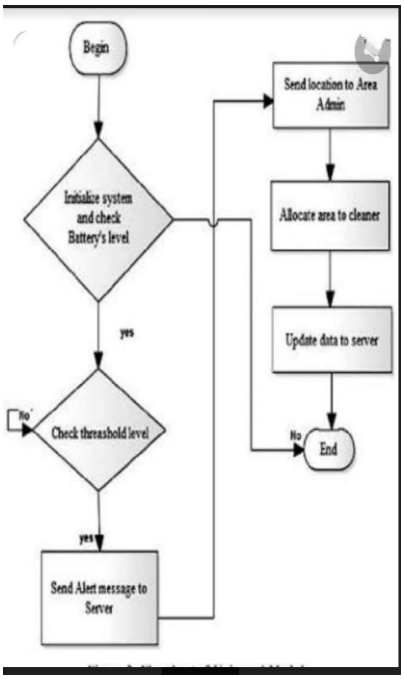

Fig. 2: Flowchart of the Project

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III C: ***Overview of the Project:***

The components used in the project are sensors, display 16*2 ,crystal oscillator,RS-232,gsm,reset,power supply, arm-7,rectifiers,filters,regulator,buzzer as shown in Fig.3.

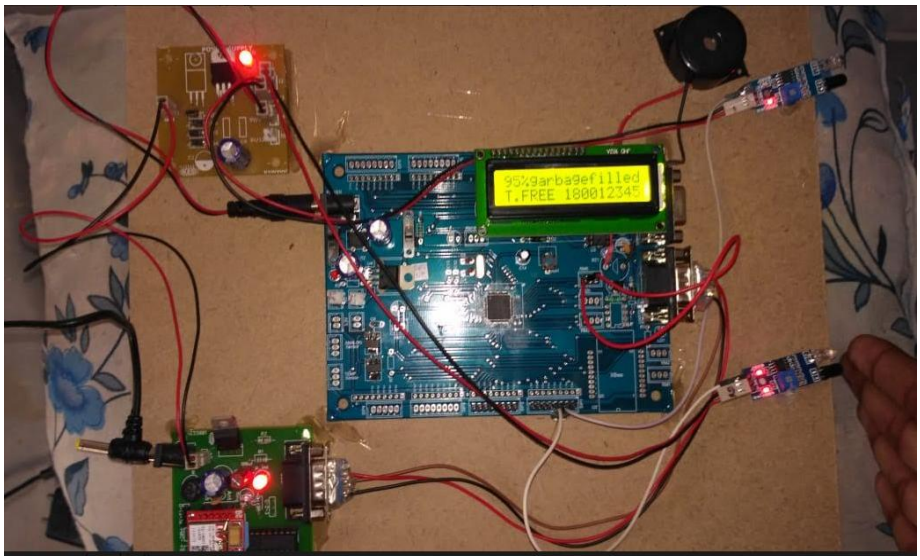

Fig. 3: ***Overview of the Project***

III. C. 1:**I.R SENSOR**

An infrared sensor is an electronic device that emits in order to sense some aspects of the surroundings. An IR sensor can measure the heat of an object as well as detects the motion. These types of sensors measures only infrared radiation, rather than emitting it that is called as a passive IR sensor as shown in Fig.4.

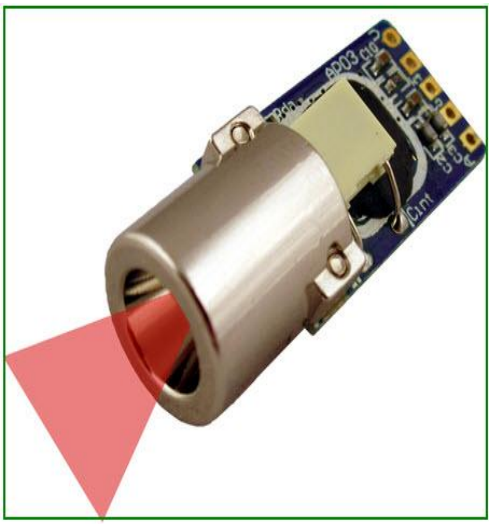

Fig. 4: I.R SENSOR

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III. C. 2: **BUZZER**

A buzzer or beeper is an audio signaling device, which may be Mechanical, electromechanical,or piezoelectric (piezo for short). Typical uses of buzzers and beepers include alarm devices, timers, and confirmation of user input such as a mouse click or keystroke as shown in Fig.5.

Fig.5: Buzzer

III. C. 3: **LCD DISPLAY**

Liquid Crystal Display is very important to check the status of any automated and semi automated devices. This can be done by displaying their status on a display module such as an LCD (Liquid Crystal Display) as shown in Fig.6.

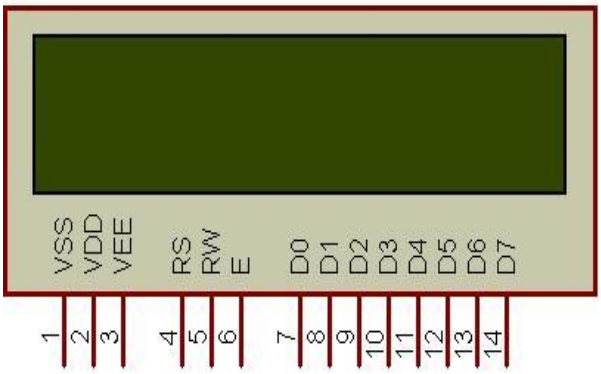

Fig.6: LCD Display

IV.**EXPERIMENTALRESULTS**

The IoT Based Smart waste monitoring and alert system setup shown in Fig. 7.the first sensor monitor the waste continuously.2.next the waste will be reached to 75 % the message will be send.3.finally waste reaches to 90% another message will be send.

The above two figures shows ,the fig1indicates waste reaches to the level 70% and send sms to the corresponding officer. the Fig.8 indicates waste level reaches to 95%.

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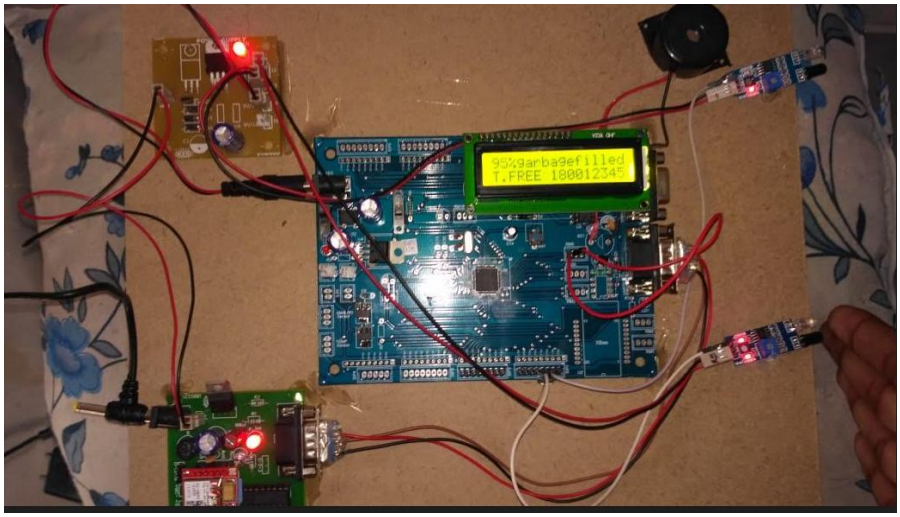

Fig.7: Indicates waste reaches to the level 70%

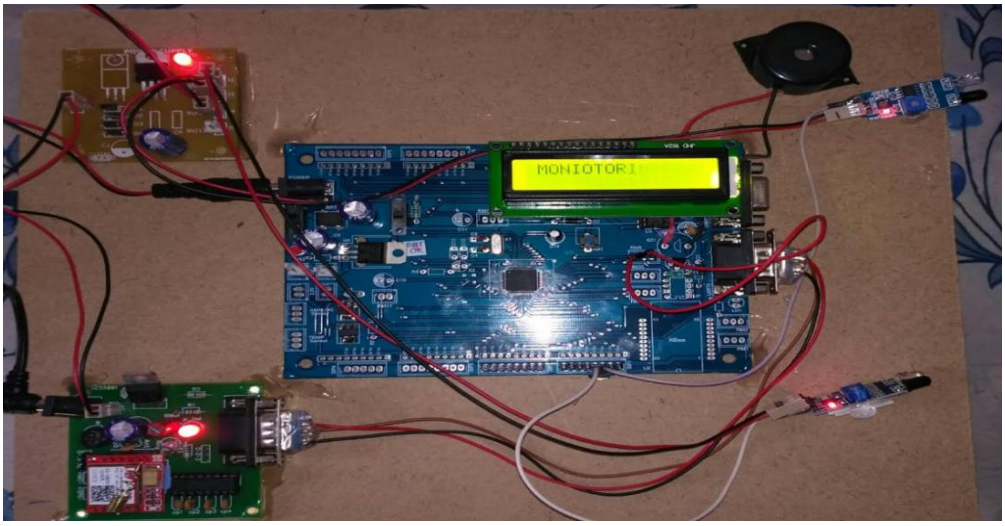

Fig.8: Indicates waste level reaches to 95%.

V.CONCLUSION

A new solution to enhance waste collection efficiently using the with Ethernet Shield technology and ultrasonic sensor systems. In this proposed system, the garbage overflow of garbage can be avoided and managed efficiently. This will intimate or send SMS or email to the authorized person through Ubidots platform. The garbage managing system and the facility of collecting the garbage presently doesn't fit to the current requirement.

Hence better facility of collecting garbage and transportation should be provided. Since, this system provides the information when the bin gets completely filled with garbage, it reduces the number oftimes the arrival of vehicle which collects the garbage. This method finally helps in keeping the environment clean. Thus, the waste collection is made more efficient.

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